

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Jay Lahti	Examiner:	Alter, A.M.
Serial No.	10/632,026	Group Art Unit:	3762
Filing Date:	July 31, 2003	Docket No.:	P0011616.00
Title:	CONNECTOR ASSEMBLY FOR CONNECTING A LEAD AND AN IMPLANTABLE MEDICAL DEVICE		

Appeal Brief

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Dear Sir:

The following Brief is submitted pursuant to the Notice of Appeal mailed March 3, 2011 and in response to the Notice of Decision mailed May 9, 2011.

As the fee for filing an Appeal Brief has already been paid, it is believed that no additional fees are due.

In the event additional fees are due, please charge any fees under 37 CFR § 1.16, 1.17, 1.136(a), or any additional fees to Deposit Account 13-2546.

I. Real party in interest

The real party in interest in this application is Medtronic, Inc, assignee of the application.

II. Related appeals and interferences

None.

III. Status of the claims

Claims 1, 3 – 17, 19 – 33 and 35 – 52 are pending. Claims 1, 3 – 17, 19 – 33 and 35 – 48 stand rejected. Claims 2, 18 and 34 are cancelled. Claims 49 – 52 are withdrawn due to a finding of constructive election in the Final Office Action. This election requirement was not traversed. These claims will be withdrawn upon indication of allowability of the appealed claims.

IV. Status of amendments

The Response mailed December 6, 2010 has been entered.

The response of December 6, 2010 contained no amendments to the claims.

The Appendix of Claims reflects the claims as finally rejected.

V. Summary of claimed subject matter

1. Claim 1

Claim 1 sets forth A connector assembly for detachably connecting a lead to an implantable medical device. The assembly comprises a connector block having a connector port to receive a proximal end of a lead inserted therein along an insertion axis of orientation. The connector block is illustrated in Figure 1 and is described generally in paragraph [0031].

The assembly further comprises a deflectable connector clip including a first arm, a second arm, and a top portion extending between the first arm and the second arm, the connector clip capable of being deflected, prior to insertion of the lead, from a first position corresponding to a first relative position of the first arm and the second arm to a second position corresponding to a second relative position of the first arm and the second arm. The clip is illustrated in Figures 3A – 3D. The two positions of the clip are illustrated in Figures 3A and 3C. The clip is described in paragraphs [0039 – 40]

The assembly finally requires a housing mounted within the connector block, the housing having a first annular member and a second annular member, the first member formed to be fixedly engaged with the second member to form an aperture in alignment with the connector port to receive the lead proximal end along the insertion axis, the connector clip being enclosed within the housing, wherein the connector clip is positioned within one of the first member and the second member while in the second position, wherein the first arm extends from the top portion to a first end and the second arm extends from the top portion to a second end, and wherein the connector clip includes a first side wall along the first end and a second side wall along the second end, the end of the first arm and the end of the second arm being offset and partially overlapping so that the first side wall is adjacent to and engaged against the second side wall when the connector clip is in the first position, and the first arm and the second arm being partially spread apart so that the ends are non-overlapping and aligned so that the first end abuts the second end and the first side wall is not adjacent to and

engaged against the second side wall when the connector clip is in the second position, the connector clip being oriented perpendicular to the insertion axis of orientation of the proximal end of a lead such that the arms, the non-overlapping ends of the arms, and the top portion together circumscribe an opening through which the proximal end of a lead passes during insertion. The housing is illustrated in Figures 2 and 4 which show the two annular members, their configurations as claimed and the location of the clips within the housing. These drawings are described in paragraphs [0037 – 38] and [0041], respectively.

2. Claim 17

Claim 17 sets forth An implantable medical device capable of being detachably connected to a lead. The device comprises a connector block having a connector port to receive a proximal end of a lead inserted therein along an insertion axis of orientation. The connector block is illustrated in Figure 1 and is described generally in paragraph [0031].

The device further comprises a first deflectable connector clip including a first arm, a second arm, and a top portion extending between the first arm and the second arm, the connector clip capable of being deflected, prior to insertion of the lead, from a first position corresponding to a first relative position of the first arm and the second arm to a second position corresponding to a second relative position of the first arm and the second arm. The clip is illustrated in Figures 3A – 3D. The two positions of the clip are illustrated in Figures 3A and 3C. The clip is described in paragraphs [0039 – 40].

The device finally comprises a housing mounted within the connector block, the housing having a first annular member and a second annular member, the first member formed to be fixedly engaged with the second member to form an aperture in alignment with the connector port to receive the lead proximal end along the insertion axis, the connector clip being enclosed within the housing, wherein the connector clip is positioned within one of the first member and the second member while in the second position, wherein the first arm extends from the top portion to a first end and the second

arm extends from the top portion to a second end, and wherein the connector clip includes a first side wall along the first end and a second side wall along the second end, the end of the first arm and the end of the second arm being offset and partially overlapping so that the first side wall is adjacent to and engaged against the second side wall when the connector clip is in the first position, and the first arm and the second arm being partially spread apart so that the ends are non-overlapping and aligned so that the first end abuts the second end and the first side wall is not adjacent to and engaged against the second side wall when the connector clip is in the second position, the connector clip being oriented perpendicular to the insertion axis of orientation of the proximal end of a lead such that the arms, the non-overlapping ends of the arms, and the top portion together circumscribe an opening through which the proximal end of a lead passes during insertion. The housing is illustrated in Figures 2 and 4 which show the two annular members, their configurations as claimed and the location of the clips within the housing. These drawings are described in paragraphs [0037 – 38] and [0041], respectively.

3. Claim 33.

Claim 33 sets forth an implantable medical device capable of being detachably connected to a lead. The device comprises a connector block having a connector port to receive a proximal end of a lead inserted therein along an insertion axis of orientation. The connector block is illustrated in Figure 1 and is described generally in paragraph [0031].

The device further comprises a first deflectable connector clip and a second deflectable connector clip, each of the first connector clip and the second connector clip including a first arm, a second arm, and a top portion extending between the first arm and the second arm, and capable of being deflected, prior to insertion of the lead, from a first position corresponding to a first relative position of the first arm and the second arm to a second position corresponding to a second relative position of the first arm and the second arm. . The clip is illustrated in Figures 3A – 3D. The two positions of the

clip are illustrated in Figures 3A and 3C. The clip is described in paragraphs [0039 – 40].

The device finally comprises a housing mounted within the connector block, the housing having a first annular member and a second annular member, wherein the first connector clip is positioned, while in the second position, within the first annular member and the second connector clip is positioned, while in the second position, within the second annular member and oriented generally orthogonally to the first connector clip, and the first member is formed to be fixedly engaged with the second member to form an aperture in alignment with the connector port to receive the lead proximal end along the insertion axis, the first connector clip and the second connector clip being enclosed within the housing, wherein, for each of the first connector clip and the second connector clip, the first arm extends from the top portion to a first end and the second arm extends from the top portion to a second end, and wherein each of the first connector clip and the second connector clip includes a first side wall along the first end and a second side wall along the second end, the end of the first arm and the end of the second arm being offset and partially overlapping so that the first side wall is adjacent to and engaged against the second side wall when the first connector clip and the second connector clip is in the first position, and the first arm and the second arm being partially spread apart so that the ends are non-overlapping and aligned so that the first end abuts the second end and the first side wall is not adjacent to and engaged against the second side wall when the first connector clip and the second connector clip is in the second position, each of the connector clips being oriented perpendicular the insertion axis of orientation of the proximal end of a lead such that the arms,, the non-overlapping ends of the arms, and the top portion together circumscribe an opening through which the proximal end of a lead passes during insertion. The housing is illustrated in Figures 2 and 4 which show the two annular members, their configurations as claimed and the location of the clips within the housing. These drawings are described in paragraphs [0037 – 38] and [0041], respectively.

VI. Grounds of rejection to be reviewed on appeal - Rejection of Claims 1, 3 – 17, 19 – 33 and 35 – 48 under Sc3ection 103 as obvious over Lim (US 5,769,671) in view of Anscher, et al (US 4,556,660).

The ground of rejection applies to all claims. Individual claims are not separately argued.

VII. Argument - Rejection of Claims 1, 3 – 17, 19 – 33 and 35 – 48 under Sc3ection 103 as obvious over Lim (US 5,769,671) in view of Anscher, et al (US 4,556,660).

The ground of rejection applies to all claims. Individual claims are not separately argued.

In the response to the Final Office Action, Applicants advanced several arguments. In order to simplify the present Appeal Brief, Applicants will focus on two simple, clear reasons that the Examiner's obviousness rejection is improper.

As stated in response to the Final Office Action, the claims require that the overlapping ends of the clip in the first position are partially spread apart so that the ends are non-overlapping and aligned so that the first end abuts the second end when the connector clip is in the second position within the housing. This missing teaching is clearly not present in Anscher or suggested by it. Like the clip in Lim, the overlapping free ends of the clip in Anscher are never disclosed as abutting one another in the second position when located in a housing. The Anscher clip isn't even disclosed as locatable within a housing. If the Anscher clip were located in a housing of the type employed in Lim, the intended path of access of the cable (from the side) would be blocked, defeating the basic purpose of the Anscher clip, which is to engage cables in regions far removed from their ends.

In response to this argument, the Advisory Action responds as follows:

Continuation of 11, does NOT place the application in condition for allowance because: The Applicant argues that Lim does not disclose overlapping free ends and Anscher et al. does not disclose a clip with free ends abutting one another when located in a housing. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The Examiner relies on Anscher et al. to teach the overlapping free ends to snugly hold and engage the lead.

With all due respect, the Examiner's response flatly mis-states Applicant's arguments and cites a text-bite inapplicable to the present situation. Contrary to the Examiner's assertion, Applicants' argument was not that the Lim reference doesn't disclose overlapping ends. The argued missing teaching of both references was of abutted, non-overlapping ends while located in the second position in the housing. The Examiner still has not addressed and does not dispute does not dispute the basic fact that this required teaching is absent from both references.

Applicant's argument was and still is that the same required teaching was missing from both the Lim and Anscher references. This is not the situation of *In re Keller*, and the cited snippet therefrom is simply inapplicable to the present case.

Because the Examiner's express argument for obviousness is based upon a clear mis-statement of facts and an inapplicable point of law, it necessarily fails to meet the standard of common sense required for a proper section 103 rejection. The Examiner is again respectfully referred to the recently issued Patent Office Guidelines for Section 103 rejections.

Withdrawal of the rejection of all remaining claims over Lim and Anscher is again respectfully requested for this reason, independent of all other arguments made by Applicants.

The only new argument made in the Final Action, upon which all rejections previously also depended, was the following:

"The Applicant argues that the clip defined by Anscher defines an opening parallel to the path of the cable it connects. However, as depicted in the figures, the

connector clip is perpendicular to the axis of the cable. Thus the connector clip as disclosed by Anscher is oriented perpendicular to the insertion axis of orientation of the cable.”

As reflected below, this argument is now expressly withdrawn in the Advisory Action, and the rejection of all claims is now based upon the following new argument as set forth in the Advisory Action:

Additionally, the Applicant argues that the Anscher et al. clip does not have an axis of insertion of the lead perpendicular to the axis of the lead, since the lead is pushed sideways into the clip and not inserted into the central lumen of the clip. Again, the applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *in re Keller*, 642 F.2d 413, 208 USPQ 971 (CCPA 1981); *in re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Regardless of the insertion means of Anscher, the Examiner employs Anscher et al. as a teaching reference to teach the overlapping free ends snugly hold and engage the lead or conduit in place. Therefore, it would have been obvious to modify the Lim clip with the free ends of Anscher et al. to snugly engage the lead or conduit. Therefore, the claims remain rejected under Lim in view of Anscher et al. as previously made of record.

However, this new argument does not actually refute or address Applicant's previous argument that:

“Both the clip in the Lim patent and that of the present invention as claimed comprise a “connector clip being oriented perpendicular to the insertion axis of orientation of the proximal end of a lead such that the arms, the non-overlapping ends of the arms, and the top portion together circumscribe an opening through which the proximal end of a lead passes during insertion”; and “Like Darby and the paper clip, in use the Anscher clip defines an opening parallel to the path along which the cable it connects is inserted. Its operational mechanism is thus directly contrary to that required by the claims.”

The Examiner newly takes the position that such a modification is obvious because “it would have been obvious to modify the Lim clip with the free ends of Anscher, et al to snugly engage the lead.”

With all due respect, the argument fails to meet the standard of common sense. The free ends of the Lim clip do not engage the lead when inserted. They are unambiguously intended not to engage the lead body. If the free ends of the Anscher clip were substituted for the free ends of Lim, they presumably also would also

employed in such a fashion that they too would not engage the lead body. Otherwise, they would directly contradict the clear teaching of Lim. Substitutions which are made in a manner that directly contradicts the express teaching of the reference into which the substitute structures are inserted cannot be deemed obvious, as they represent the modification of the primary reference in a manner contrary to the controlling express teaching thereof.

The Examiner's argument as to why the substitution would be obvious is simply that the result would be that the free ends of the modified Lim device would "snugly engage the lead or conduit". This is not an argument as to why the substitution would be obvious. It includes no reason why, in the context of a device otherwise as in Lim, free ends that snugly engage the lead body would be desirable. The argument thus boils down to an assertion that the substitution would be desirable for the purpose of meeting the claims of the present application. Such an argument is inadequate and improper as a matter of law.

More importantly, the expressly stated result of the proposed substitution (overlapping free ends that snugly engage the lead body) doesn't meet the claim language anyway. The claims require abutting, non-overlapping free ends. If the resultant free ends taken from Anscher are arranged to "snugly engage" the lead body, they correspondingly would not be abutting one another. They don't abut one another in Anscher either. They are expressly disclosed as having a space therebetween.

Even under KSR, the Examiner's argument isn't nearly good enough. The rationale for rejection just becomes more unreasonable when the proposed result of the combination (free ends snugly engaging the lead body) is directly contrary to the teaching of the primary reference and doesn't meet the actual limitations of the claims anyway.

Withdrawal of the rejection of all remaining claims over Lim and Anscher is respectfully requested for this reason, independent of all other arguments made by Applicants.

As a side note, the rampant practice of offering arguments in Advisory Actions based upon interpretations of the prior art inconsistent with those in the Final Office Actions is one of the reasons that the Patent Office is over-run with RCE applications. It is respectfully suggested that this practice should be curtailed. New interpretations of prior art references which are contradictory to previous interpretations should be set forth in new Office Actions, not Advisory Actions.

In view of the above, Applicants respectfully request reconsideration and withdrawal of the above rejection of claims 1, 3-17, 19-33 and 35-48 under 35 U.S.C. § 103(a).

Presumably the Examiner has finished with all of the searching she is going to do. It is respectfully asserted that the time has come to allow this application to issue. Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone Reed Duthler at (763) 526-1564 to attend to these matters.

The Commissioner is authorized to charge any deficiencies and credit any overpayments to Deposit Account No. 13-2546 for entry of the instant Response.

Respectfully submitted,

Date: June 8, 2011

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VIII. Claims Appendix

The claims on appeal are as follows:

1. A connector assembly for detachably connecting a lead to an implantable medical device, comprising:

a connector block having a connector port to receive a proximal end of a lead inserted therein along an insertion axis of orientation;

a deflectable connector clip including a first arm, a second arm, and a top portion extending between the first arm and the second arm, the connector clip capable of being deflected, prior to insertion of the lead, from a first position corresponding to a first relative position of the first arm and the second arm to a second position corresponding to a second relative position of the first arm and the second arm; and

a housing mounted within the connector block, the housing having a first annular member and a second annular member, the first member formed to be fixedly engaged with the second member to form an aperture in alignment with the connector port to receive the lead proximal end along the insertion axis, the connector clip being enclosed within the housing, wherein the connector clip is positioned within one of the first member and the second member while in the second position, wherein the first arm extends from the top portion to a first end and the second arm extends from the top portion to a second end, and wherein the connector clip includes a first side wall along the first end and a second side wall along the second end, the end of the first arm and the end of the second arm being offset and partially overlapping so that the first side wall is adjacent to and engaged against the second side wall when the connector clip is in the first position, and the first arm and the second arm being partially spread apart so that the ends are non-overlapping and aligned so that the first end abuts the second end and the first side wall is not adjacent to and engaged against the second side wall when the connector clip is in the second position, the connector clip being oriented perpendicular to the insertion axis of orientation of the proximal end of a lead such that the arms, the non-overlapping ends of the arms, and the top portion together

circumscribe an opening through which the proximal end of a lead passes during insertion.

2. (Canceled)

3. The connector assembly of claim 1, wherein the housing and the connector clip are formed of an electrically conductive metal.

4. The connector assembly of claim 3, wherein the electrically conductive metal is stainless steel.

5. The connector assembly of claim 1, wherein the first member and the second member form an aperture to receive the lead, the first arm and the second arm being engaged against the lead as the lead is advanced through the aperture to further deflect the first arm and the second arm from the second position to a third position corresponding to a third relative position of the first arm and the second arm.

6. The connector assembly of claim 5, wherein the first end is extended a distance outward from the second end when the connector clip is in the third position.

7. The connector assembly of claim 1, wherein the first member includes a first flange extending outward from a front surface of the first member to a first flange top portion, and the second member includes a second flange extending outward from a front surface of the second member to a second flange top portion, the first flange top portion being fixedly engaged against the second flange top portion to enclose the connector clip within the housing.

8. The connector assembly of claim 7, wherein the first flange and the front surface of the first member form a first recessed portion and the second flange and the front surface of the second member form a second recessed portion, the connector clip being

positioned within one of the first recessed portion and the second recessed portion and deflected to the second position.

9. The connector assembly of claim 8, wherein the connector clip includes a bottom portion, the first arm extending from the top portion to the bottom portion and the second arm extending from the top portion to the bottom portion, and wherein the top portion is engaged against one of the first flange and the second flange and the bottom portion is spaced from the one of the first flange and the second flange.

10. The connector assembly of claim 8, wherein the front surface of the first member and the front surface of the second member form an aperture to receive the lead within the housing, the first arm and the second arm being engaged against the lead as the lead is advanced through the aperture to further deflect the first arm and the second arm from the second position to a third position corresponding to a third relative position of the first arm and the second arm.

11. The connector assembly of claim 10, wherein the first end is extended a distance outward from the second end when the connector clip is in the third position.

12. The connector assembly of claim 1, wherein the first member includes a first flange extending outward from a front surface of the first member and the second member includes a second flange extending outward from a front surface of the second member, the second flange capable of being fixedly engaged about the first flange to enclose the connector clip within the housing.

13. The connector assembly of claim 12, wherein the second member includes a third flange extending outward from the front surface of the second member, the first flange and the front surface of the first member forming a first recessed portion and the third flange and the front surface of the second member form a second recessed

portion, the connector clip being positioned within one of the first recessed portion and the second recessed portion and deflected to the second position.

14. The connector assembly of claim 13, wherein the connector clip includes a bottom portion, the first arm extending from the top portion to the bottom portion and the second arm extending from the top portion to the bottom portion, and wherein the top portion is engaged against one of the first flange and the third flange and the bottom portion is spaced from the one of the first flange and the third flange.

15. The connector assembly of claim 13, wherein the front surface of the first member and the front surface of the second member form an aperture to receive the lead within the housing, the first arm and the second arm being engaged against the lead as the lead is advanced through the aperture to further deflect the first arm and the second arm from the second position to a third position corresponding to a third relative position of the first arm and the second arm.

16. The connector assembly of claim 15, wherein the first end is extended a distance outward from the second end when the connector clip is in the third position.

17. An implantable medical device capable of being detachably connected to a lead, comprising:

- a connector block having a connector port to receive a proximal end of a lead inserted therein along an insertion axis of orientation;

- a first deflectable connector clip including a first arm, a second arm, and a top portion extending between the first arm and the second arm, the connector clip capable of being deflected, prior to insertion of the lead, from a first position corresponding to a first relative position of the first arm and the second arm to a second position corresponding to a second relative position of the first arm and the second arm; and

- a housing mounted within the connector block, the housing having a first annular member and a second annular member, the first member formed to be fixedly engaged

with the second member to form an aperture in alignment with the connector port to receive the lead proximal end along the insertion axis, the connector clip being enclosed within the housing, wherein the connector clip is positioned within one of the first member and the second member while in the second position, wherein the first arm extends from the top portion to a first end and the second arm extends from the top portion to a second end, and wherein the connector clip includes a first side wall along the first end and a second side wall along the second end, the end of the first arm and the end of the second arm being offset and partially overlapping so that the first side wall is adjacent to and engaged against the second side wall when the connector clip is in the first position, and the first arm and the second arm being partially spread apart so that the ends are non-overlapping and aligned so that the first end abuts the second end and the first side wall is not adjacent to and engaged against the second side wall when the connector clip is in the second position, the connector clip being oriented perpendicular to the insertion axis of orientation of the proximal end of a lead such that the arms, the non-overlapping ends of the arms, and the top portion together circumscribe an opening through which the proximal end of a lead passes during insertion.

18. (Canceled)

19. The device of claim 17, wherein the housing and the connector clip are formed of an electrically conductive metal.

20. The device of claim 19, wherein the electrically conductive metal is stainless steel.

21. The device of claim 17, wherein the first member and the second member form an aperture to receive the lead, the first arm and the second arm being engaged against the lead as the lead is advanced through the aperture to further deflect the first arm and

the second arm from the second position to a third position corresponding to a third relative position of the first arm and the second arm.

22. The device of claim 21, wherein the first end is extended a distance outward from the second end when the connector clip is in the third position.

23. The device of claim 17, wherein the first member includes a first flange extending outward from a front surface of the first member to a first flange top portion, and the second member includes a second flange extending outward from a front surface of the second member to a second flange top portion, the first flange top portion being fixedly engaged against the second flange top portion to enclose the connector clip within the housing.

24. The device of claim 23, wherein the first flange and the front surface of the first member form a first recessed portion and the second flange and the front surface of the second member form a second recessed portion, the connector clip being positioned within one of the first recessed portion and the second recessed portion and deflected to the second position.

25. The device of claim 23, wherein the connector clip includes a bottom portion, the first arm extending from the top portion to the bottom portion and the second arm extending from the top portion to the bottom portion, and wherein the top portion is engaged against one of the first flange and the second flange and the bottom portion is spaced from the one of the first flange and the second flange.

26. The device of claim 24, wherein the front surface of the first member and the front surface of the second member form an aperture to receive the lead within the housing, the first arm and the second arm being engaged against the lead as the lead is advanced through the aperture to further deflect the first arm and the second arm from

the second position to a third position corresponding to a third relative position of the first arm and the second arm.

27. The device of claim 26, wherein the first end is extended a distance outward from the second end when the connector clip is in the third position.

28. The device of claim 17, wherein the first member includes a first flange extending outward from a front surface of the first member and the second member includes a second flange extending outward from a front surface of the second member, the second flange capable of being fixedly engaged about the first flange to enclose the connector clip within the housing.

29. The device of claim 28, wherein the second member includes a third flange extending outward from the front surface of the second member, the first flange and the front surface of the first member forming a first recessed portion and the third flange and the front surface of the second member form a second recessed portion, the connector clip being positioned within one of the first recessed portion and the second recessed portion and deflected to the second position.

30. The device of claim 29, wherein the connector clip includes a bottom portion, the first arm extending from the top portion to the bottom portion and the second arm extending from the top portion to the bottom portion, and wherein the top portion is engaged against one of the first flange and the third flange and the bottom portion is spaced from the one of the first flange and the third flange.

31. The device of claim 29, wherein the front surface of the first member and the front surface of the second member form an aperture to receive the lead within the housing, the first arm and the second arm being engaged against the lead as the lead is advanced through the aperture to further deflect the first arm and the second arm from

the second position to a third position corresponding to a third relative position of the first arm and the second arm.

32. The device of claim 31, wherein the first end is extended a distance outward from the second end when the connector clip is in the third position.

33. An implantable medical device capable of being detachably connected to a lead, comprising:

- a connector block having a connector port to receive a proximal end of a lead inserted therein along an insertion axis of orientation;

- a first deflectable connector clip and a second deflectable connector clip, each of the first connector clip and the second connector clip including a first arm, a second arm, and a top portion extending between the first arm and the second arm, and capable of being deflected, prior to insertion of the lead, from a first position corresponding to a first relative position of the first arm and the second arm to a second position corresponding to a second relative position of the first arm and the second arm; and

- a housing mounted within the connector block, the housing having a first annular member and a second annular member, wherein the first connector clip is positioned, while in the second position, within the first annular member and the second connector clip is positioned, while in the second position, within the second annular member and oriented generally orthogonally to the first connector clip, and the first member is formed to be fixedly engaged with the second member to form an aperture in alignment with the connector port to receive the lead proximal end along the insertion axis, the first connector clip and the second connector clip being enclosed within the housing, wherein, for each of the first connector clip and the second connector clip, the first arm extends from the top portion to a first end and the second arm extends from the top portion to a second end, and wherein each of the first connector clip and the second connector clip includes a first side wall along the first end and a second side wall along the second end, the end of the first arm and the end of the second arm being offset and

partially overlapping so that the first side wall is adjacent to and engaged against the second side wall when the first connector clip and the second connector clip is in the first position, and the first arm and the second arm being partially spread apart so that the ends are non-overlapping and aligned so that the first end abuts the second end and the first side wall is not adjacent to and engaged against the second side wall when the first connector clip and the second connector clip is in the second position, each of the connector clips being oriented perpendicular the insertion axis of orientation of the proximal end of a lead such that the arms,, the non-overlapping ends of the arms, and the top portion together circumscribe an opening through which the proximal end of a lead passes during insertion.

34. (Canceled)

35. The device of claim 33, wherein the housing and the first connector clip and the second connector clip are formed of an electrically conductive metal.

36. The device of claim 35, wherein the electrically conductive metal is stainless steel.

37. The device of claim 33, wherein the first member and the second member form an aperture to receive the lead, the first arm and the second arm being engaged against the lead as the lead is advanced through the aperture to further deflect the first arm and the second arm from the second position to a third position corresponding to a third relative position of the first arm and the second arm.

38. The device of claim 37, wherein the first end is extended a distance outward from the second end when the first connector clip and the second connector clip is in the third position.

39. The device of claim 33, wherein the first member includes a first flange extending outward from a front surface of the first member to a first flange top portion, and the second member includes a second flange extending outward from a front surface of the second member to a second flange top portion, the first flange top portion being fixedly engaged against the second flange top portion to enclose the first connector clip and the second connector clip within the housing.

40. (Original) The device of claim 39, wherein the first flange and the front surface of the first member form a first recessed portion and the second flange and the front surface of the second member form a second recessed portion, the first connector clip being positioned within the first recessed portion and deflected to the second position, and the second connector clip being positioned within the second recessed portion and deflected to the second position.

41. The device of claim 39, wherein each of the first connector clip and the second connector clip include a bottom portion, the first arm extending from the top portion to the bottom portion and the second arm extending from the top portion to the bottom portion, and wherein the top portion of the first connector clip is engaged against the first flange and the top portion of the second connector clip is engaged against the second flange, and the bottom portion of the first connector clip is spaced from the first flange and the bottom portion of the second connector clip is spaced from the second flange.

42. The device of claim 40, wherein the front surface of the first member and the front surface of the second member form an aperture to receive the lead within the housing, the first arm and the second arm of each of the first connector clip and the second connector clip being engaged against the lead as the lead is advanced through the aperture to further deflect the first arm and the second arm from the second position to a third position corresponding to a third relative position of the first arm and the second arm.

43. The device of claim 42, wherein the first end is extended a distance outward from the second end when the first connector clip and the second connector clip is in the third position.

44. The device of claim 33, wherein the first member includes a first flange extending outward from a front surface of the first member and the second member includes a second flange extending outward from a front surface of the second member, the second flange capable of being fixedly engaged about the first flange to enclose the first connector clip and the second connector clip within the housing.

45. The device of claim 44, wherein the second member includes a third flange extending outward from the front surface of the second member, the first flange and the front surface of the first member forming a first recessed portion and the third flange and the front surface of the second member form a second recessed portion, the first connector clip being positioned within the first recessed portion and deflected to the second position, and the second connector clip being positioned within the second recessed portion and deflected to the second position.

46. The device of claim 45, wherein each of the first connector clip and the second connector clip include a bottom portion, the first arm extending from the top portion to the bottom portion and the second arm extending from the top portion to the bottom portion, and wherein the top portion of the first connector clip is engaged against the first flange and top portion of the second connector clip is engaged against the third flange, and the bottom portion of the first connector clip is spaced from the first flange and the bottom portion of the second connector clip is spaced from the third flange.

47. The device of claim 45, wherein the front surface of the first member and the front surface of the second member form an aperture to receive the lead within the housing, the first arm and the second arm of each of the first connector clip and the

second connector clip being engaged against the lead as the lead is advanced through the aperture to further deflect the first arm and the second arm from the second position to a third position corresponding to a third relative position of the first arm and the second arm.

48. The device of claim 47, wherein the first end is extended a distance outward from the second end when the first connector clip and the second connector clip is in the third position.

49. (Withdrawn) A connector assembly for detachably connecting a lead to an implantable medical device, comprising:

- a connector block having a connector port to receive a proximal end of a lead inserted therein along an insertion axis of orientation;

- a first deflectable connector clip having only two lead contact surfaces including a first arm, a second arm, and a top portion extending between the first arm and the second arm, the connector clip capable of being deflected, prior to insertion of the lead, from a first position corresponding to a first relative position of the first arm and the second arm to a second position corresponding to a second relative position of the first arm and the second arm; and

- a housing mounted within the connector block configured to maintain the first deflectable connector clip.

50. (Withdrawn) The assembly of claim 49, further comprising:

- a second deflectable connector clip similar to the first deflectable connector clip, contained within the housing, rotated with respect to the first connector clip, wherein the housing is configured to maintain the first and second deflectable connector clips in the second position.

51. (Withdrawn) The assembly of claim 50, comprising:

wherein the second deflectable connector clip includes two lead contact surfaces.

52. (Withdrawn) The assembly of claim 49, comprising:

wherein the housing includes a first annular member and a second annular member, the first member formed to be fixedly engaged with the second member to form an aperture in alignment with the connector port to receive the lead proximal end along the insertion axis, the connector clip being enclosed within the housing, wherein the connector clip is positioned within one of the first member and the second member while in the second position, wherein the first arm extends from the top portion to a first end and the second arm extends from the top portion to a second end, and wherein the connector clip includes a first side wall along the first end and a second side wall along the second end, the end of the first arm and the end of the second arm being offset and partially overlapping so that the first side wall is adjacent to and engaged against the second side wall when the connector clip is in the first position, and the first arm and the second arm being partially spread apart so that the ends are non-overlapping and aligned so that the first end abuts the second end and the first side wall is not adjacent to and engaged against the second side wall when the connector clip is in the second position, the connector clip being oriented perpendicular to the insertion axis of orientation of the proximal end of a lead such that the arms, the non-overlapping ends of the arms, and the top portion together circumscribe an opening through which the proximal end of a lead passes during insertion.

IX. Evidence Appendix

None.

X. Related Proceedings Appendix

None.